

**SAS Superstructure**

Location: 04-SF-80-13.2 / 13.9

Client Name: CalTrans

Run date 21-Nov-14

Time 9:57 AM

Daily Diary Report by Bid Item

Contract No.: 04-0120F4

Diary #: 108 Const Calendar Day: 428 Date: 10-Nov-2010 Wednesday

Inspector Name: Brignano, Bob Title: Transportation Engineer

Inspection Type:

Shift Hours: Break: Over Time:

Federal ID:

Location:

Reviewer: Schmitt, Alex Approved Date: Status: Submit

**04-0120F4
04-SF-80-13.2/13.9
Self-Anchored
Suspension Bridge****Weather**

Temperature 7 AM 12 PM 4PM

Precipitation Condition

Working Day ☒ If no, explain:**Diary:**

Dispute

General CommentsITEM 52 FURNISH STRUCTURAL STEEL (BRIDGE)(TOWER);
HIGH STRENGTH FASTENER ASSEMBLY PRE-INSTALLATION TESTING:

For ABF, engineer Chris Bausone is present for testing. For CT, engineer Bob Brignano is present for testing. Today's testing is for inspection torque by turning from the bolt head. Today's testing does not include rotational capacity or minimum tension verification, which were previously performed tests for the same rocap lots with testing from the nut. The rocap lot assemblies tested today are for the Tower cross braces. Work happens at Bolt Testing Conex ABF ID 002079 with Skidmore Model HT 4000 ABF ID 000612 in the warehouse. The sampling and testing today is between 1100 and 1200. Two (2) rocap lots of 3/4" diameter assemblies are tested.

For turning by the bolt head, torque values are typically higher than for turning by the nut, because the galvanized bolt head underside that rotates relative to the galvanized washer is not lubricated like the galvanized nut underside. As a result of the lack of lubrication, the bolt head often seizes against the washer and the rotation occurs between the washer and the first steel ply. For testing in a Skidmore, standard practice is to use several plies of fill plates, shims, or washers as necessary to make the bolt length work in the machine with the appropriate bolt thread stickout beyond the nut. Sometimes, between the stacked plies is where the rotation happens in the test setup, which gives an inappropriately low torque value (lowest friction materials give the lowest torque value). For the first tests of the first rocap lot tested today, the rotation happened between machined Skidmore fill plates. Then, for later tests with the first rocap lot and for all tests with the second rocap lot, a painted shim plate is added between the galvanized washer and the first machined Skidmore fill plate, so the rotation happens in the appropriate location. However, flaking galvanizing accumulates on the painted shim plate, resulting in inappropriately high torque values. At the end of testing 5 assemblies from each rocap lot, averaging the results for each rocap lot, and comparing the values for the two rocap lots, we decide to average the two very different torque results from the two otherwise similar rocap lots and apply that single value as an appropriate inspection torque value for both rocap lots.

See the attached Bolt Test Form for details of the testing.

